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I CLAIM AS MY INVENTION:

1. An antenna arrangement for a magnetic resonance apparatus comprising:

at least two adjacent individual antennas; and

a galvanically contact-free decoupling coil configured to inductively couple with both of said adjacent individual antennas to produce a minimal inductive coupling between said two adjacent individual antennas.

2. An antenna arrangement as claimed in claim 1 comprising a reactive component, selected from the group consisting of capacitive components and inductive components, connected in said decoupling coil to set a current in said decoupling coil to a value at which said inductive coupling between said two adjacent individual antennas is minimal.

3. An antenna arrangement as claimed in claim 2 wherein said reactive component has a variable reactance.

4. An antenna arrangement as claimed in claim 1 wherein each of said adjacent individual antennas comprises a conductor loop, the respective conductor loops of said adjacent individual antennas being disposed to generate an antenna field in a common antenna plane.

5. An antenna arrangement as claimed in claim 1 wherein said decoupling coil comprises a conductor loop disposed in a plane substantially perpendicular to said adjacent individual antennas.

6. An antenna arrangement as claimed in claim 1 wherein said decoupling coil comprises a conductor loop disposed in a plane substantially parallel to said adjacent individual antennas.

7. An antenna arrangement as claimed in claim 6 wherein said decoupling coil comprises a conductor loop in a figure-eight shape, said figure-eight shape having a first loop half at least partially overlapping one of said adjacent individual antennas and a second loop half at least partially overlapping the other of said adjacent individual antennas.

8. An antenna arrangement as claimed in claim 1 comprising a plurality of adjacent individual antennas respectively disposed in rows and columns and forming a plurality of antenna groups, each antenna group containing two individual antennas directly adjacent to each other in a row, that overlap each other for decoupling, and two individual antennas directly adjacent to each other in a column, that overlap each other for decoupling, with diagonally adjacent individual antennas in each group being decoupled from each other by a decoupling coil configured so that inductive coupling between said diagonally adjacent individual antennas is minimal.

9. An antenna arrangement as claimed in claim 8 wherein the decoupling coil in each group comprises a conductor loop with a figure-eight shape having an axis of symmetry parallel to a diagonal line between said diagonally adjacent individual antennas.

10. An antenna arrangement as claimed in claim 9 wherein said conductor loop with a figure-eight shape has a first loop half overlapping one of said diagonally adjacent individual antennas, and a second loop half overlapping the other of said diagonally adjacent individual antennas.

11. An antenna arrangement as claimed in claim 10 wherein said individual antennas in each group form an octagonal conductor loop.

12. A method for acquiring magnetic resonance signals with an antenna arrangement having two adjacent individual antennas, comprising the steps of:

providing a decoupling coil in galvanically contact-free relationship to said adjacent individual antennas; and

configuring said decoupling coil to be inductively coupled with both of said adjacent individual antennas to produce a minimal inductive coupling between said two adjacent individual antennas.

13. A method as claimed in claim 12 comprising setting a current in said decoupling coil to a value at which said inductive coupling is minimal between said individual antennas by connecting a reactive component, selected from the group consisting of capacitive components and inductive components, in said decoupling coil.